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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,617

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Peter Back Knudsen

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EXAMINER

PEACE, RHONDA S

ART UNIT

PAPER NUMBER

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,617	<b>Applicant(s)</b> KNUDSEN, PETER BACK	
	<b>Examiner</b> Rhonda S. Peace	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/5/2006; 8/21/2007; 12/12/2007</u> . | 6) <input type="checkbox"/> Other: ____.  |



## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) of this National Stage application from the International Bureau (PCT Rule 17.2(a)), which papers have been placed of record in the file.

### *Information Disclosure Statement*

The information disclosure statements (IDS) submitted on 6/5/2006, 8/21/2007, and 12/12/2007 were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 8, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiao et al (US 6,318,863).

Pertaining to claims 1 and 11, Tiao et al discloses a display comprising a light transmissive display **230**, a plurality of light emitters **202**, a light guiding plate **220** overlapping and being substantially parallel to the light transmissive display **230**, and a plurality of tapered light guides **212** each extending between said plate **220** and said emitters **202**. See col. 3 lines 7-31. The tapered light guides **212** are each adapted to direct light from an emitter **202** in said plurality of emitters to the said plate **220**. The

plate acts to guide the light received from said tapered guides **212** and guides light parallel to said transmissive display **230** such that the light is received by and directed through said transmissive display **230**. See col. 3 lines 31-47. Note that herein the optical axis of the transmissive display is chosen to define the transmissive display axis, and the optical axis of the plate is chosen to define the plate axis, wherein the light transmissive axis is parallel to the plate axis. The light transmissive display and plate overlap one another in a direction orthogonal to both the plate axis and the transmissive display axis. The above elements are provided, as shown in Figure 2A.

Concerning claims 2, 5, 6, and 8, the tapered light guides **212** extend along the entire length of side **220a** of plate **220** and couple light from the emitters **202** through the side **220a** of plate **220**. See col. 3 lines 41-47. The emitters **202** have a maximum size that is significantly smaller than the plate **220**, as seen in Figure 2. The plate **220** has a side **220b** facing the transmissive display and being the same area as the transmissive display. See col. 3 lines 46-47. As seen in Figure 2, the distance between the upper-most emitter **202** and the bottom-most emitter **202** is approximately equal to the length of side **220b**. Array **200**, comprising emitters **202** and their corresponding electrical elements, is partially positioned between the emitters **202** and the guides **212**, as seen in Figure 2.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al (US 6,318,863).

Concerning claim 3, Tiao et al discloses the device as described above. Tiao et al does not disclose the guides being a single, monolithic element. Nonetheless it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the tapered guides as a single, monolithic element such that said guides are integral, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Pertaining to claim 7, Tiao et al discloses the device as described above. Tiao et al does not disclose the device comprising at most ten emitters. Nonetheless, it would have been obvious to one of ordinary skill in the art to include at most ten emitters in the device of Tiao et al in order to avoid excessive illumination. Moreover, it has been held that discovering an optimum value (such as ten) of a result effective variable (such as

the number of emitters included in a device) involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al (US 6,318,863), in further view of Tsutsui et al (US 2001/0030571A1).

With regard to claim 9, Taio et al discloses the device as described above. Tiao et al does not disclose the above device as being used within a mobile phone. However, Tiao et al does disclose the above device as suitable for an LCD display (see col. 2 lines 15-21). Tsutsui et al discloses an LCD used within a mobile phone as a display panel. See ¶ 0031. Therefore, it would have been obvious to one of ordinary skill in the art to utilize the above device in a mobile phone, as this increases the functionality and marketability of the device, as said device is usable in more applications.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al (US 6,318,863), in further view of Bassous et al (US 4,007,464).

Pertaining to claim 10, Tiao et al discloses the device and method as described above. However, Tiao et al does not disclose wherein the step of providing the plate comprises removing tapered portions of the plate so as to provide a tapered part of the plate between each group of one or more said light guides and the portion of the plate overlapping said transmissive display. In other words, Tiao et al discloses light guides **212** are formed separately from plate **220**, and therefore Tiao et al does not disclose

forming said guides and plate as an integral material, wherein the tapered portions of the guides are formed by a process which removes a portion of the material forming the guides and plate, such as etching or patterning. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the tapered guides **212** and plate **220** of the same material such that guides **212** and plate **202** are integral, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Further pertaining to claim 10, Bassous et al discloses a silicon substrate in which a tapered recess is formed in said substrate with an etching process, thereby creating a triangular-shaped recess in the surface of said substrate. See col. 3 lines 28-59 and Figs 1-2. It would have been obvious to one of ordinary skill in the art to combine the teachings of Tiao et al and Bassous et al, thereby forming the tapered recesses in the integral guide/plate structure, thereby forming the device as seen in Figure 2 of Tiao et al, as Bassous et al discloses such an etching process, wherein a portion of the substrate is removed to form a desired geometry, as the process provides a high degree of control to form a desired geometry. See Bassous et al, col. 2 lines 3-11.

Pertaining to claim 4, Tiao et al in view of Bassous et al discloses the device and method as described above. Tiao et al does not disclose the recesses being formed such that two adjacent tapered light guides are defined by a rounded shape. Tiao et al, as seen in Figure 2, shows two adjacent tapered light guides defined by a sharp-pointed



triangular shape. Bassous et al discloses the bottom of the recess in the silicon substrate may be rounded, thereby forming a pyramid-shaped recess with a rounded apex. See col. 3 lines 56-58 and Figs 1-2. It would have been obvious to one of ordinary skill in the art to form the recesses that two adjacent tapered light guides are defined by a rounded shape, as Bassous et al discloses the rounded-apex geometry reduces stress on the substrate. See col. 3 lines 56-59.

### ***Conclusion***

The following art made of record and not relied upon is considered pertinent to applicant's disclosure: Kitamura et al (US 2004/0165371A) and Kraft (US 6,908,204).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/  
Examiner, Art Unit 2874

/Michelle R. Connelly-Cushwa/  
Primary Examiner, Art Unit 2874